

MARJORIELLA, A NEW NEOTROPICAL GENUS OF
AGATHIDINAE (BRACONIDAE, HYMENOPTERA)

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Abstract

Marjoriella, a new genus of Agathidinae from the Neotropical region, is described. Four species, all new are included: *M. ancha*, *M. beni*, *M. henryi* and *M. townesorum*. A cladistic analysis is presented suggesting the clade, *Megagathis* Kriechbaumer plus *Labagathis* Enderlein, as the sister group of *Marjoriella*.

INTRODUCTION

Little work on the Neotropical fauna of the braconid subfamily Agathidinae has been done in the last 60 years. Brullé (1846), Enderlein (1918), Szépligeti (1904), and Viereck (1912a, 1912b, 1913), described several Neotropical agathidinae genera; however, the characters of none of their genera agree with those of the new genus described here. Intergeneric relationships are based on cladistic methods (see Hennig 1966 and Wiley 1981). Character states have been polarized using outgroup analysis (see Waltrous and Wheeler 1981).

Abbreviations

The following abbreviations are used for institutions in which type-material of the new species described in this paper are deposited.

A.M.N.H.: American Museum of Natural History, New York, New York.

C.N.C.: Canadian National Collection, Ottawa, Ontario.

C.P.H.: Center for Parasitic Hymenoptera, Gainesville, Florida.

Wing venation: (Fig. 3e): The Comstock-Ross system of nomenclature for wing venation has been used.

The venation of *Marjoriella* is not fully understood in the area of the areolet. It is not clear whether the vein labelled RS₁ (Fig. 3e) is, in fact, the 2nd radial sector or simply an adventitious vein. This confusion will be resolved only after a cladistic analysis of the entire subfamily allows the origin of the vein to be elucidated. If the vein is part of the ground plan for the Agathidinae, then there is support for my hypothesis that it represents a remnant of the second radial sector. Conversely, a cladistic analysis may show the vein to be a derived adventitious vein not homologous with RS₂.

MARJORIELLA, new genus

Type-species: *Marjoriella henryi*, n. sp.

Gender of the genus: Feminine.

Length of body about 10.0 mm. *Head*: Head wider than long (Fig. 1a); face moderately long but not rostriform; malar space shorter than eye height; maxillary palpus 5-segmented; labial palpus 4-segmented, segments subequal

in length; frontal pit deep, with frontal and marginal carinae; marginal carinae strongly elevated, between and laterad of antennal sockets; vertex (in dorsal view) not excavated; occiput with strong lateral carinae; gena very wide, about equal to eye width, with sharp groove posteroventrally for reception of lateral portion of pronotum; gena forming acute angle at its apex; antenna long, equal to or longer than body, 50- to 54-segmented.

Mesosoma: Pronotum with large anterior flange occupying space between carinae of occiput (Fig. 3a); pronotum strongly compressed posterodorsally anterior to mesoscutum; sternulus strongly foveolate; mesoscutum smooth, notauli absent; scutellum smooth, without carinae; posterior portion of mesoscutum, scutellum and metanotum on same plane; metanotum smooth medially, without sculpture or armature; propodeum (Fig. 3c) flat; with deep groove anteromedially and small depression centrally, otherwise smooth and glabrous medially; propodeal spiracles large and oval; propleura with pair of projections extending between middle coxae (Fig. 3b); hind coxal cavities open; basal tooth of tarsal claws forming sharp angle (Fig. 3d); spines absent from outer surface of middle tibia; areolet of fore wing sessile (Fig. 3e), 4 sided, with small 2nd radial sector; 2_{rm} of hind wing not indicated.

Metasoma: All terga smooth, without sculpture except for weak V-shaped groove sometimes present on tergum 2; tergum 1 wide, length about equal to apical width; ovipositor very short, decurved.

Diagnosis: These are large agathidines readily separated from others by the following combination of characters: Occiput with strong lateral carinae; areolet sessile and 4-sided with a small segment of 2nd radial sector present, propleura and mesopleura with projections ventrally between the fore and middle coxae respectively; propodeum flat, not convex, with a deep longitudinal anteromedial groove.

Distribution: Restricted to South America; see map (Fig. 2).

Etymology: I am pleased to name this genus after Dr. Marjorie Townes who has worked at Henry's side for many years and contributed greatly to his work.

Relationships: Cladistic methods were used in this study to hypothesize the phylogenetic relationships of *Marjoriella*. Character states were polarized using outgroup comparison, the outgroup being the remaining taxa of Agathidinae.

Marjoriella is highly autapomorphic in many characters, such as the shape of the areolet and the sculpture of the propodeum, that are useful in making suprageneric groupings in another genera within the Agathidinae. In spite of this there are two convincing synapomorphies uniting *Marjoriella* with *Megagathis* Kriechbaumer and *Labagathis* Enderlein. Members of both of these genera, like *Marjoriella*, have large anterior flanges on their pronota. The second synapomorphy is the strong lateral carinae of the occiput. These carinae are not homologous with occipital carinae. In *Megagathis* these carinae are reduced and rounded. No other braconids have anterior flanges on the pronotum or lateral carinae on the occiput. The phylogram (Fig. 1) illustrates the relationships of these three genera. *Megagathis* plus *Labogathis* is the sister group of *Marjoriella*.

The monophyly of *Marjoriella* is supported by the following synapomorphies of its component species:

1. Spines on pro- and mes-episternum present (Fig. 3b).
2. Unique shape of areolet (Fig. 3e).
3. Unique shape of propodeum (Fig. 3c).

Biology: All agathidines, whose hosts are known, parasitize lepidopteran larvae, and *Marjoriella* is likely no exception, though there are no host records for this genus. Because of the short size of their ovipositors they may parasitize exposed larvae, rather than those concealed in leaf rolls, thick webs, or in stems. With this in mind and due to their rather large size I hypothesize their hosts to be noctuids and probably members of the subfamily Catocalinae. The Catocalinae are the dominant group of Lepidoptera in Neotropical rainforests, comprising the vast majority of the 16,000 described species of noctuids from the Neotropical region.

KEY TO SPECIES OF MARJORIELLA (Females)

1. Wings banded 2
 Wings not banded, yellowish with darker stigmal area
 4. *townesorum*, n. sp.
2. Propodeum black, with areolae mesad of spiracles 2. *beni*, n. sp.
 Propodeum testaceous, smooth between spiracles except for medial
 grooves 3
3. Terga 2+3 wider than long, length/width = 0.8; hind femur incrassate,
 length/width = 2.5 1. *ancha*, n. sp.
 Terga 2+3 longer than wide, length/width = 1.4; hind femur of normal
 proportions, length/width = 3.2 3. *henryi*, n. sp.

1. *Marjoriella ancha*, n. sp.

The adult female of this species is most similar to that of *M. beni* but can easily be distinguished by its lighter coloration and the lack of areolae in the area between the propodeal spiracles.

Female: Length 10.0 mm. Black and testaceous; head including antennae black; anterior portion of mesosoma black; metapleuron brown; propodeum testaceous, all coxae black laterad, testaceous mesad, legs black, brown and testaceous; metasoma testaceous except black apically.

Antenna 54 segmented. Metapleuron entirely areolate rugose; hind femur incrassate, length/width = 2.5; fore wing banded yellow and black, black bands positioned apically and in stigmal area; 1 RS of normal proportions 1 RS / 1 RS₂ = 1.6. Metasomal terga rather wide; tergum 1 wider than long, length / apical width = 0.9; terga 2+3 wider than long, length / width = 0.8; ovipositor short, ovipositor sheath 1/5 length of hind femur.

Male: Unknown.

Holotype: F, Surinam, Paramaribo, 13.IX.1963, D.C. Geijskes (C.P.H.).

Etymology: Ancha means wide in Spanish and refers to the wide body dimensions of female of this species.

2. *Marjoriella beni*, n. sp.

The adult female of *M. beni* is similar to that of *M. ancha* in general size but is easily distinguished from the latter species by darker coloration of and presence of areolae between the propodeal spiracles.

Female: Length 10.0 mm. Black except fore tarsi, parts of middle tarsi and hind trochanters testaceous; hind legs medially and metasoma anteriorly reddish.

Antennae 52-segmented. Metapleuron entirely areolate rugose, hind femur incrassate, length/width = 2.8; fore wing mostly infusate, yellowish basally and with hyaline band distad of stigma; 1 RS rather short, $1\text{ RS} / 1\text{RS}_2 = 2.3$; propodeum with oval depressions mesad of and subequal to propodeal spiracles. Metasomal terga wide; tergum 1 wider than long, length / apical width = 0.77; terga 2+3 about as wide as long, length / width = 0.95; tergum 2 with a strong transverse V-shaped groove, glabrous anterior to groove, setose posteriorly; ovipositor sheath short, about 1/5 length of hind femur.

Male: Unknown.

Holotype: F, Bolivia, Beni, Rio Itenez, opposite Costa Marques (Brazil), 4-6.XIII.1964, Bouseman + Lussenhop (AMNH).

3. *Marjoriella henryi*, n. sp.

The adult female of *M. henryi* is most similar to *M. townesorum* but is distinguished from the latter by presence of a dark band in the stigmal area of the fore wing.

Female: Length 9.5 mm. Testaceous except: head and antennae black, propleuron black, pleural regions of thorax brown to black, all coxae black laterad, testaceous to yellow mesad, most of middle tibia and hind tarsi brown, propodeum brown, metasoma black apically.

Antennae 51-segmented. Metapleuron partly smooth but with some large rugose areolae; hind femur not too wide, length / width = 3.2; fore wing banded yellow and black, black bands positioned apically and in stigmal area; 1 RS rather long, $1\text{ RS} / 1\text{ RS} = 2.2$. Metasomal terga of normal dimensions; tergum 1 as wide as long, terga 2+3 longer than wide, length / width = 1.4; ovipositor short, ovipositor sheaths about 1/5 length of hind femur.

Male: Unknown.

Variation: The paratype F differs from the holotype only in its lighter coloration i.e. mesopleurae and propodeum testaceous.

Holotype: F, Brazil, Mato Grosso, Sinop, X.1974, Malaise trap, M. Alvarenga.

Paratype: F, same data as holotype (CNC).

Etymology: This species is named for Dr. Henry Townes, in honor of his distinguished career in entomology.

4. *Marjoriella townesorum*, n. sp.

The adult female of *M. townesorum* is most similar to that of *M. henryi*, but may easily be distinguished from it by the narrower metasoma and the lack of a dark band in the stigmal area of the fore wing.

Female: Length 10.0 mm. Testaceous except head including antennae black, pronotum black anteriorly, hind tarsi brown, metasoms black distally.

Antennal number ? (broken). Metapleuron mostly smooth with weak rugae peripherally; hind femur of normal proportions, length / width = 3.4; fore wing darkening apically but without dark median band as in (Fig. 3e); 1 RS of normal proportions, 1 RS / 1 RS₂ = 1.7. All metasomal terga smooth and shining, without grooves; tergum 1 long, longer than wide, length / apical width = 1.1; terga 2+3 long, longer than wide, length / width = 1.2; ovipositor very short, not extruded; ovipositor sheaths barely visible in holotype, small, less than 1/5 length of hind femur.

Male: Unknown.

Holotype: F, Brazil, Mato Grosso, Sinop, 12°31'S, 55°37'W, X.1974, M. Alvarenga (CPH).

Etymology: I name this species in honor of Henry and Marjorie Townes and their union.

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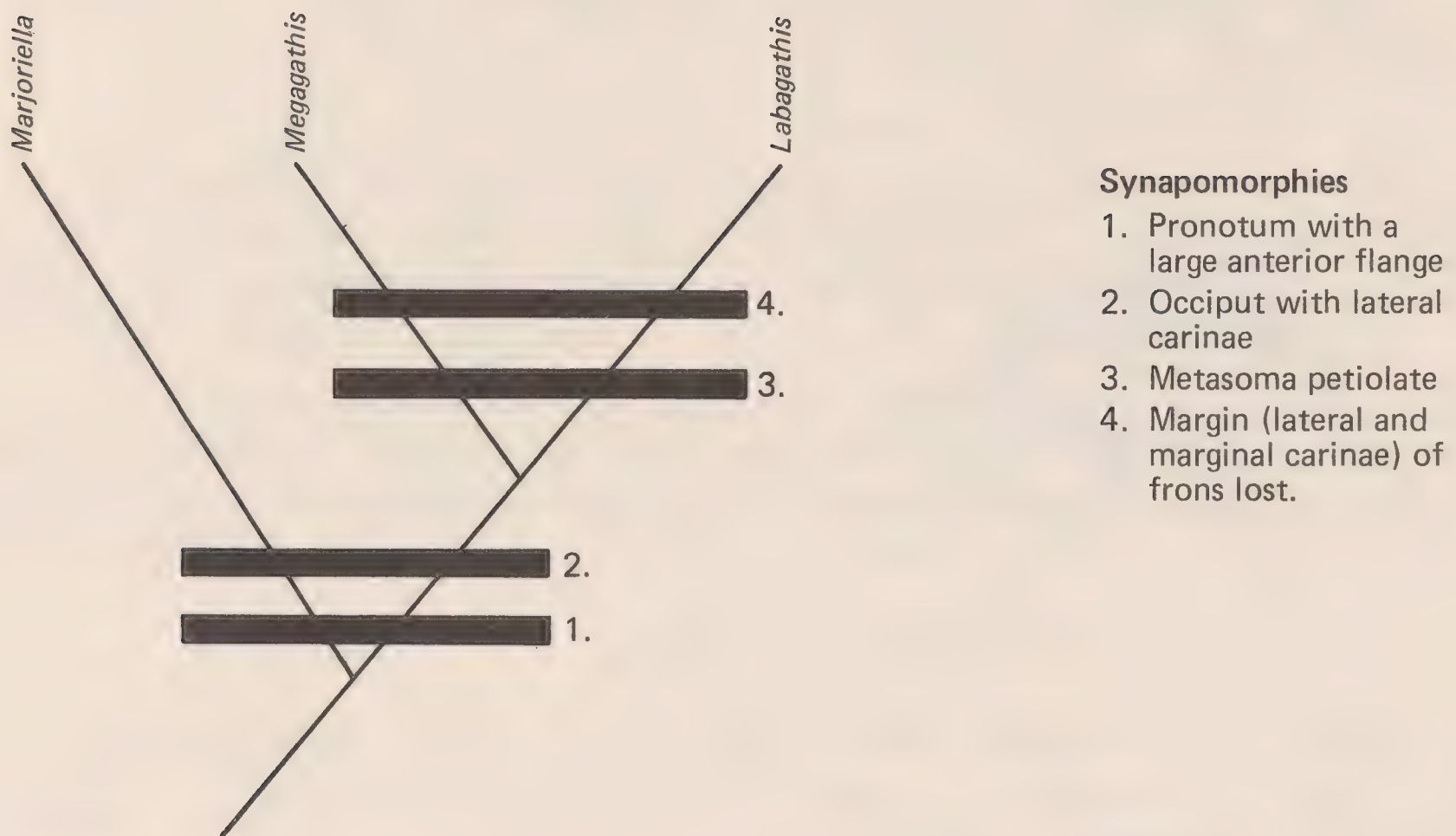


Fig. 1. Proposed phylogeny of *Marjoriella* and its sister group *Megagathis* plus *Labagathis*.

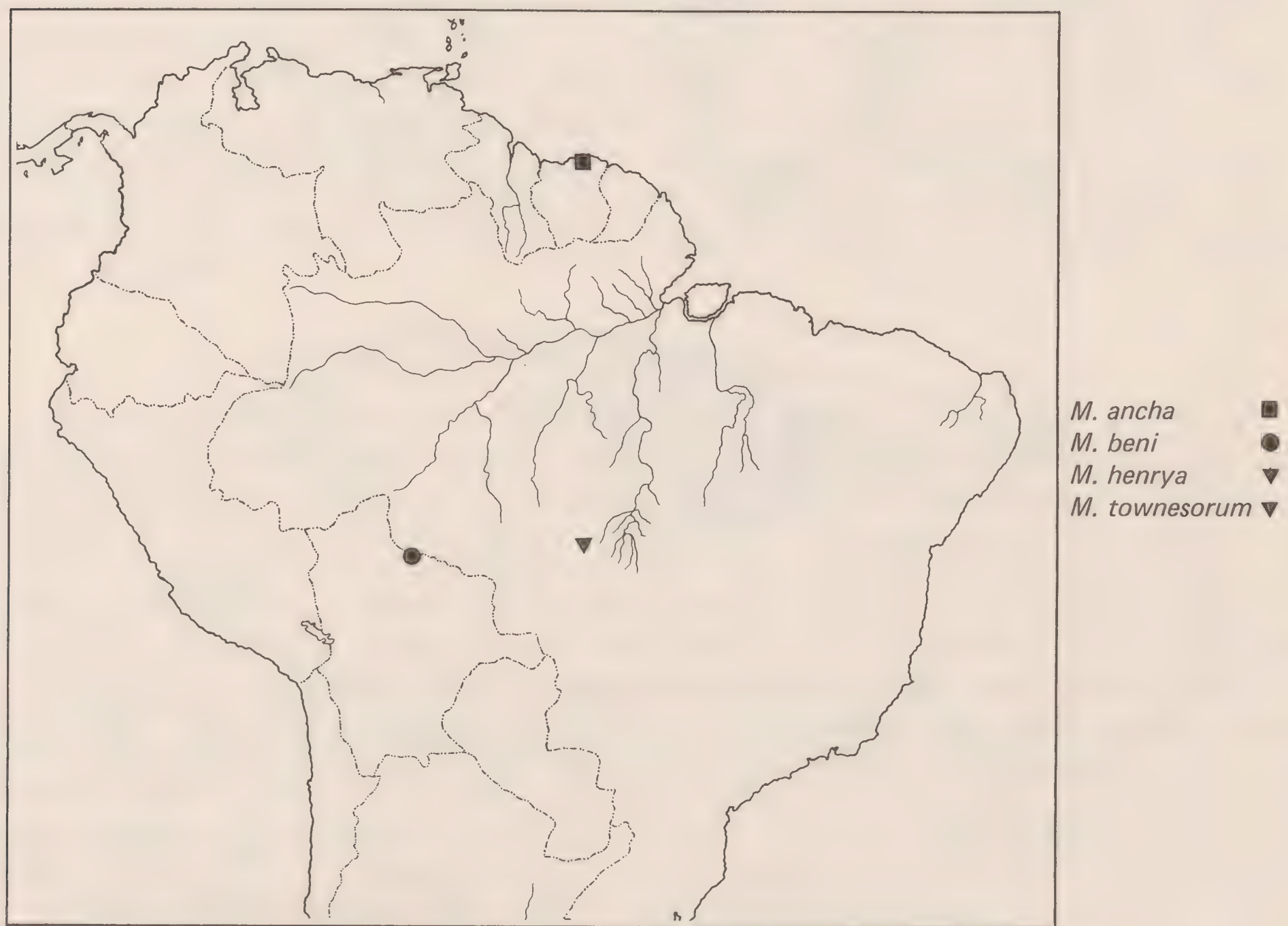


Fig. 2. Distribution map of *Marjoriella* spp.

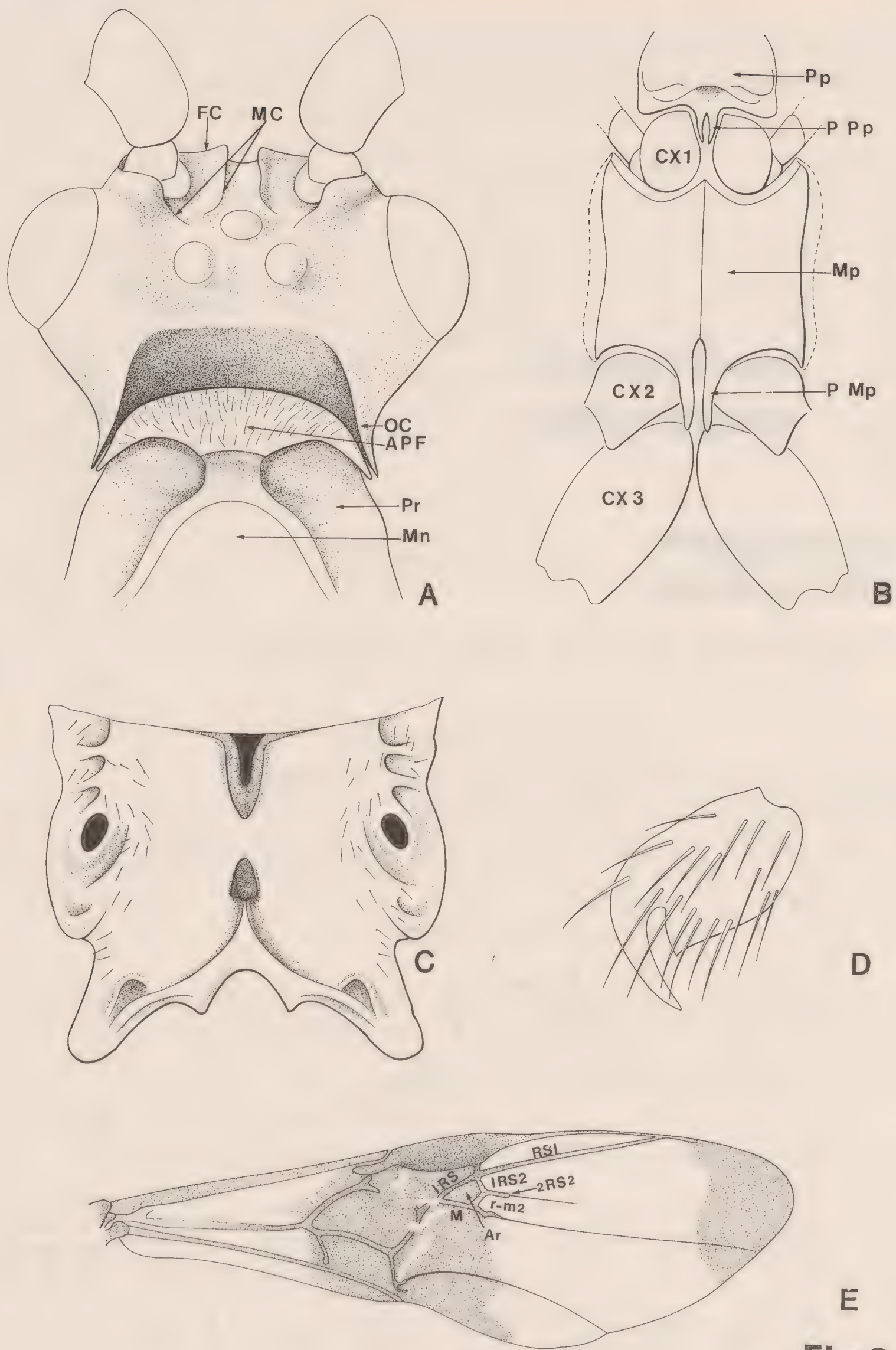


Fig.3

Fig. 3. A, *Marjoriella ancha*, posterodorsal view of head and anterior mesosoma. APF, anterior pronotal flange; FC, frontal carina; Mn, mesonotum; MC, marginal carinae; OC, lateral carina of occiput; Pr, pronotum. B, *M. townesorum*, ventral aspect of mesosoma. C_{x1}, coxa 1; Mp, mesopleuro.; P Mp, projections of mesopleuron; Pp, propleuron; P Pp, projections of propleuron. C, *M. ancha*, propodeum. D, *M. henryi*, tarsal claw of hind leg. E, *M. beni*, fore wing. Ar, areolet; M, medial vein; r-m2, 2nd abscissa of radial-medial cross vein; 1 RS, 1st abscissa of radial sector; RS1, 1st branch of radial sector; 1RS2, 1st abscissa of 2nd branch of radial sector; 2RS2, 2nd abscissa of 2nd branch of radial sector.